Submission in Response to NSF CI 2030 Request for Information

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Research Domain, discipline, and sub-discipline

Psychology, cognitive and developmental

Title of Submission

On-line data collection

Abstract (maximum ~200 words).

Online data collection is an important and growing problem for the cognitive and behavioral sciences. At this point, the technology is crossing thresholds: it's ubiquitous in the population (everyone has a computer); it's ubiquitous in time (many people carry smart phones); it's becoming multi-sensory (AR/VR set ups are increasingly popular and cheap). This means that are many potential ways to collect data, and many ways for these data to become compromised. The problem is not a technically complicated one, but it two aspects that are difficult to address by individual investigators and that would benefit from a large-scale solution: 1) Availability of commonly-used paradigms on-line to ensure uniformity of data collection to maximize reproducibility and the growth of collective knowledge-- such availability requires a stably-funded base for storage and access; 2) Associated with such availability, on-line tutorials and perhaps a consultant hotline to ease experimenter and participant obstacles to use, 3) For new paradigms based on recent publications, measures to address lack of technical knowledge or time for research assistants, consultants, researchers to make their own tools available.

Question 1 Research Challenge(s) (maximum ~1200 words): Describe current or emerging science or engineering research challenge(s), providing context in terms of recent research activities and standing questions in the field.

see abstract

Question 2 Cyberinfrastructure Needed to Address the Research Challenge(s) (maximum ~1200 words): Describe any limitations or absence of existing cyberinfrastructure, and/or specific technical advancements in cyberinfrastructure (e.g. advanced computing, data

infrastructure, software infrastructure, applications, networking, cybersecurity), that must be addressed to accomplish the identified research challenge(s).

see abstract

Question 3 Other considerations (maximum ~1200 words, optional): Any other relevant aspects, such as organization, process, learning and workforce development, access, and sustainability, that need to be addressed; or any other issues that NSF should consider.

see abstract

Consent Statement

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